

NAVAL POSTGRADUATE SCHOOL

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THESIS

**ORGANIZATIONAL DESIGN PRINCIPLES FOR
COUNTERING TERRORISM IN THE UNITED STATES**

by

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December 2000

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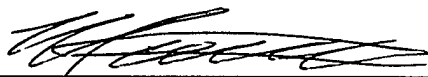
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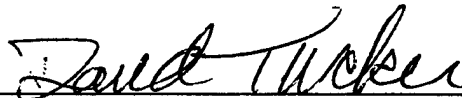


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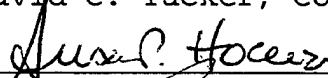


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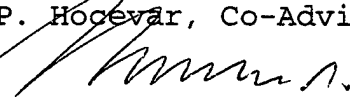
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ABSTRACT

Recent terrorist activities (the World Trade Center bombing, the Oklahoma Federal Building bombing, the release of Sarin Gas in the Tokyo subway, etc.) have focused the national leadership on the topic of terrorism inside the borders of the United States. In response, two Presidential Decision Directives (PDD-62 and PDD-63) were issued to help define the terrorist threat and recommend a counter-terrorism organization in the federal government. However, the directives do not determine how the Federal government works with state and local authorities. The directives also do not focus on local, state, and federal capabilities to preempt a possible terrorist attack. This thesis builds a organizational framework of the U. S. counter-terrorism environment; explains the current U. S. counter-terrorism structure from a local perspective; develops a set of principles that could be used by any local or federal agency to develop a new or more efficient counter-terrorism organization; assesses two domestic counter-terrorism organizations; and proffers specific recommendations on how U. S. counter-terrorism organizations and programs could be more efficient.

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I. INTRODUCTION

A. DOMESTIC COUNTERTERRORISM: WHY THIS TOPIC?

The acquisition, proliferation, threatened or actual use of weapons of mass destruction by a terrorist group or individuals constitutes one of the gravest threats to the United States. (Louis J. Freeh, 1997)

This thesis links our dual interest in domestic counterterrorism and organizational theory. In pursuing this interest, we were unable to find a study that explains how to organize most effectively local, state and federal organizations to preempt terrorism in the U.S. The purpose of this thesis is to just that; to try and determine the best way to organize to preempt the threat posed by domestic terrorism.

Why is it important to organize better to combat domestic terrorism? One reason is that domestic terrorism in the U.S. will not just go away. It is likely that there will continue to be individuals and groups that are disgruntled with U.S. policies and will use terrorism to voice their concerns. Further, many experts agree that terrorism in the U.S. will become more lethal, and might possibly include the use of a weapon of mass destruction (WMD), as FBI director Louis Freeh notes in our quotation at the head of this chapter. For the United States the problem is stopping domestic terrorism before it happens. The question we pursue here is how should we organize to do so.

B. METHODOLOGY

This thesis will use Transorganizational Development (Cummings, 1984) and Differentiated Network (Nohria and Ghoshal, 1997) theory to evaluate current organizational systems for combatting domestic terrorism. We picked these two theories because they both are currently accepted and have been used to evaluate other multi-agency organizations. Another reason we picked them is because they address problems that multi-agency systems have when trying to solve a common problem. Also, most organization theories focus on single organization design. These theories, by contrast, look at the problems associated with multi-organization systems. Combating domestic terrorism in the U.S. requires multiple Federal, State and Local agencies to work together to solve a common problem. These theories in particular, therefore, are relevant to the organizational problems associated with combating domestic terrorism.

Differentiated Network theory and Cumming's Transorganizational Systems theory, however, were developed using corporate organizations as models and do not completely parallel current United States counter-terrorism organizations. While we believe that most of the observations that Nohria, Ghoshal, and Cummings make are valid and applicable to the situation of domestic counter-

terrorism, we realize that there may be specific instances where their observations do not fit current counter-terrorism organization. Therefore, we will use these theories as a general guideline but will make some changes to reflect unique counter-terrorism (C-T) organizational requirements. We explain this further in Chapter III.

As a tool to focus our research, we developed research questions from the material present in these two organizational theories. The research questions are: 1) How should the United States organize to preempt domestic terrorism? 2) What is the current counter-terrorist situation in the United States? 3) What current organizational structure exists to counter domestic terrorism in the United States? 4) How well does the domestic counter-terrorism organization structure currently match the terrorist situation in the United States? 5) What principles and/or processes would help the United States to organize more efficiently?

We have attempted to answer our research questions by gathering data from three sources: 1) The Monterey County Office of Emergency Services, 2) Los Angeles Emergency Operation Center Terrorism Working Group, 3) Open source archival data. The results of this study should ultimately

answer the question of how a United States inter-governmental organization structure should be formed to facilitate a rapid transition to crisis management with a minimal warning time.

C. ORGANIZATION OF THESIS

Chapter II describes a typical terrorist event, the current C-T organization in the United States, and the problems facing this organization. Chapter III explains the Transorganizational Development and Differentiated Network theories and applies them to the current US domestic CT organization. It concludes with a list of principles used to evaluate the efficiency of the current domestic terrorism organization. In Chapter IV we use these principles to evaluate the Monterey County Office of Emergency Services and the Los Angeles County Terrorism Early Warning Group. Chapter V offers our conclusions and recommendations pertaining to the current structure.

D. DEFINITIONS

The following are important definitions used in this thesis:

Weapon of Mass Destruction (WMD) - As defined by Title 18, U. S. C. 2332a, is: a weapon of mass destruction as (1) any destructive device as defined in section 921 of this title, [which reads] any explosive, incendiary, or poison gas, bomb, grenade, rocket having a propellant charge of more than four ounces, missile having an

explosive or incendiary charge of more than one-quarter ounce, mine or device similar to the above; (2) poison gas; (3) any weapon involving a disease organism; or (4) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life (FEMA, 1997).

Standardized Emergency Management System (SEMS). -

SEMS is focused on standardizing the organizational structure and terminology at all levels. It is the system used for coordinating state and local emergency response in California. SEMS provides for a multiple level response organization that facilitates the flow of emergency information and resources within and between the organizational levels. Five management levels (field, local government, operational area, regional, and state) are identified, along with the responsibilities and methods of operations. SEMS development involved coordination with all interested state and emergency management agencies. SEMS became effective on December 1, 1996 (California, 1998).

Unified Command Structure (UCS) - The California Office of Emergency Services, Law Enforcement Guide for Emergency Operations (1998) defines the UCS as the following: A procedure used at incidents which allows all agencies with geographical, legal or functional responsibility to establish a common set of incident objectives and strategies, and a single incident action plan (p. 17.).

Terrorism - Deliberate creation and exploitation of fear through violence or the threat of violence in the pursuit of political change (Hoffman, p. 43., 1998).

Significant Threat - A significant threat is the confirmed presence of an explosive device or WMD capable of causing a significant destructive event prior to actual injury or property loss (FEMA, 1997).

Credible Threat - a verbal or written statement gathered from intelligence or any other activity (FEMA, 1997).

Consequence Management - includes measures to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses and individuals affected by the consequences of terrorism. The laws of the United States assign primary authority to the States to respond to the consequences of terrorism; the Federal Government provides assistance as required (FEMA, 1997).

Crisis Management - includes measures to identify, acquire, and plan the use of resources needed to anticipate, prevent, and/or resolve a threat or act of terrorism. The laws of the United States assign primary authority to the Federal Government to prevent and respond to acts of terrorism; State and local governments provide assistance as required. Crisis management is -predominantly a law enforcement response. Based on the situation, a Federal crisis management response may be supported by technical operations, and by Federal consequence management, which may operate concurrently (FEMA, 1997).

II. COUNTERTERRORISM SITUATION

A. INTRODUCTION

The purpose of this chapter is to present the situation encountered by the network of local, state, and federal agencies in the United States that combat terrorism. We will use a detailed synopsis of a terrorism incident and an illustration of the current counter-terrorism (C-T) structures at the local, state, and federal levels. We will then characterize the C-T situation in terms of problem structuredness, task interdependence, complexity, and availability of resources. These are analytical terms we have taken from Nohria, Ghoshal (1997) and Cummings (1984). In Chapter III we will use these terms to select which organizational principles are most important when designing a C-T organization.

B. THE WORLD TRADE CENTER BOMBING

According to the presiding judge of the World Trade Center Bombing trial, the bombing that took place on February 26, 1993 was intended to topple the building amid a cloud of cyanide gas killing tens of thousands of Americans (Mylorie, 1995). While the intent to use cyanide gas has been questioned (Parachini, 2000), the bomb did kill six, injure a thousand more, and cause over 300 million dollars in property damage (Childers, 1998). Eventually, five

foreign national conspirators were brought to trial. One still remains at large (Childers, 1998). The events leading up to the bombing begin to show how difficult it is to counter domestic terrorism in the United States. This case also illustrates the large number of interdependent actors that can be present in just one incident of terrorism.

C. SYNOPSIS OF A TERRORIST INCIDENT

In September 1991, Ahmad Ajaj entered the United States under the guise of demanding political asylum from Israel. In April of 1992 he traveled to Pakistan under an assumed name before his hearing on asylum with the INS. While in Pakistan, Ajaj attended a terrorist training camp and began plotting with Ramzi Yousef to blow up the World Trade Center. Almost a year later, on August 31, 1992, Ajaj and Yousef attempted to enter the U.S. using fake passports. Yousef was initially detained because he did not have a valid U.S. Visa, but was released because he claimed he paid a Pakistani to let him board the plane and wanted political asylum in the U.S. Ajaj was detained due to a suspicious passport and for carrying bomb-making notebooks, videotapes, and manuals. Ultimately, Ajaj was imprisoned for six months and Yousef entered New York and began to work. (Childers, 1998)

For the next four months Yousef worked with two trusted co-conspirators, Mohamed Salameh and Abdul Rahman Yasin, to obtain the money and supplies for the bomb. They also secured an apartment and a storage facility. The supplies for the bomb were all easily obtained through local chemical supply companies. They purchased and had delivered to the storage shed 1500 pounds of urea and 1672 pounds of nitric acid (Reeve, 1999).

Having secured the essential materials, during January and February 1993 the conspirators began mixing the bomb in their rented apartment. On February 23, 1993, the plotters rented a Ryder Ford Cargo Van. On February 25, 1993, the conspirators reported the van stolen and gave the wrong license plate number so the police could not track the van. On February 25, 1993, the conspirators loaded the van with their bomb and the next day drove the van to the B-2 level of the World Trade Center. At 12:18 p.m. the van exploded. Within 2 days all of the conspirators escaped the country except Salameh, who tried unsuccessfully to get back his deposit for the van (Reeve, 1999).

In order to bring these criminals to justice, the FBI's New York Joint Terrorism Task Force (JTTF) was called into action within minutes of the attack. The JTTF was

originally formed in 1980 with 25-30 investigators from the NYPD and the FBI. At the time of the bombing, the New York JTTF had grown to 40-50 investigators from the FBI, NYPD, State Department, Secret Service, INS, FAA, U. S. Marshals, ATF, New York State Police, and the Port Authority Police. This team was permanently on duty in Manhattan. These investigators immediately began analyzing incoming calls claiming responsibility for the bombing. By the end of the weekend of the bombing more than 30 calls had been registered claiming responsibility for the attack. Within a week, the FBI alone had 70 investigators working the case. Eventually, the U.S. government was able to work with other countries and bring 5 of the conspirators to trial (Reeve, 1999).

Given the interagency character of the JTTF, a close look at the current counter-terrorism organization is warranted in order to understand the mandates and agency interplay that now define U. S. domestic counter-terrorism.

D. COUNTERTERRORISM ORGANIZATION

The following passage summarizes the historical background of executive branch action and legislative acts that have occurred in the last 5 years. Specifically this passage summarizes the key actions that Presidential Decision Directives (PDDs) 39, 62, and 63 directed. The

Anti-Terrorism and Effective Death Penalty Act and the Nunn-Lugar-Domenci Act supported the Clinton Administrations focus on the potential threat of WMD.

In 1995, President Clinton issued Presidential Decision Directive 39 (PDD-39), the "U.S. Policy on Counterterrorism." This directive assigned the FBI as the lead federal agency to coordinate all aspects of the Federal response to a WMD incident. It also established the Federal Emergency Management Agency (FEMA) as the lead federal agency for addressing the effects or potential effects of such an incident on public health, safety, and the environment.

In 1996, the Anti-Terrorism and Effective Death Penalty Act tasked FEMA to develop and deliver training to firefighters and emergency medical personnel. Congress provided financing to the Department of Defense (DoD) in 1996 to provide WMD training and assistance to state and local authorities. This training effort, referred to as Nunn-Lugar-Dominici after its sponsoring senators, designated the 120 largest cities in the United States for specialized training and equipment assistance. (See Figure 1)

and state and local emergency response planners are helping to establish training standards, information sharing, equipping, planning, and exercises for first responders.

As the lead investigative agency, the FBI derives its legal jurisdiction to deter, investigate, direct, organize and prepare for a terrorist incident from an assortment of federal statutes and executive branch directives. Any alleged or suspected criminal violations of the Weapons of Mass Destruction Statute and the Biological Weapons Anti-terrorism Act will be investigated by the FBI. The WMD Statute includes the threat or use of a WMD weapon, and defines the WMD weapon as any destructive device (i.e. explosive or incendiary), chemical or biological agent, or the release of life threatening levels of radioactive material. The Biological Weapons Anti-terrorism Act Statute specifically provides for the prosecution of individuals who utilize hoax devices. (FBI and Weapons of Mass Destruction, 1999)

These three Presidential Directives and two legislative acts provided the U. S. government the authority to create a new federal level interagency organization to counter domestic terrorism. (See Figure 2)

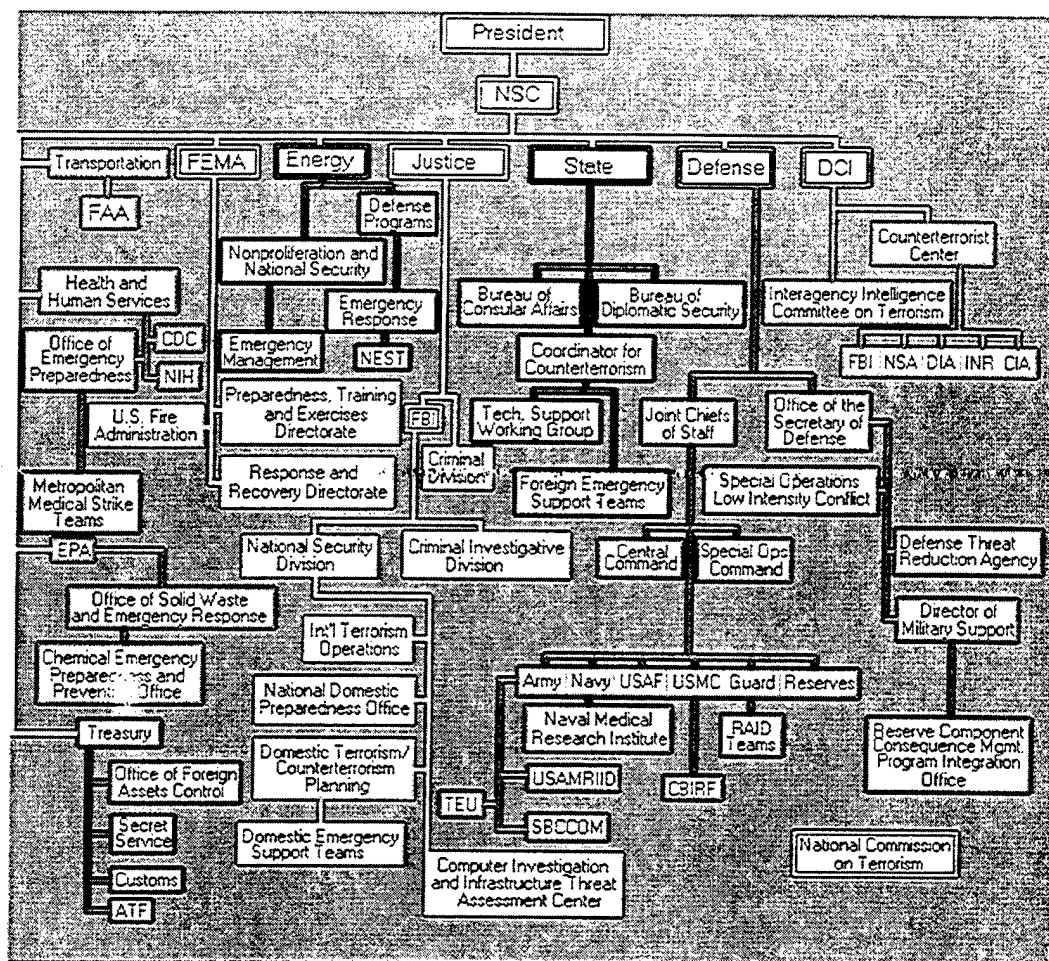


Figure 2. Federal Domestic Counter-Terrorism Organizational Chart From Ref. [Center for Nonproliferation Studies, Organizational Chart, 2000].

According to PDD-63, the US CT organization displayed in Figure 2:

...shall have achieved and shall maintain the ability to protect our nation's critical infrastructures from intentional acts that would significantly diminish the abilities of:

the Federal Government to perform essential national security missions and to ensure the general public health and safety; state and local government to maintain order and to deliver minimum essential public services; the private sector to ensure the orderly function of the economy and the delivery of essential telecommunications, energy, financial and

transportation services. (White Paper, p. 137, 1998)

The FBI, as the lead agency tasked with protecting our infrastructures, has designated as one of its strategic goals in its Strategic Plan for 1998-2003 to "prevent, disrupt, and defeat terrorist operations before they occur" (Freeh, 1999). The FBI has focused primarily on "Crisis Management", which it defines as actions taken before a terrorist incident occurs. The Federal Emergency Management Agency (FEMA), by contrast, has been directed to focus on "Consequence Management" designed to mitigate the effects of a terrorist incident should it occur. The rest of the Federal agencies listed above perform supporting roles in technical areas of domestic counter-terrorism based on the nature and progress of a terrorist incident. Because our thesis focuses on the problem of preemption the organizational analysis we have conducted is most pertinent to the crisis prevention structure.

The Federal Government's structure was built around the mandated participation of eight agencies, including the Department of Defense, as prescribed in PDD-63.¹ It is critical to note that although PDD-63 insists on interagency

coordination and information sharing at the federal level, it makes little reference to the local and state organizational structures in place to handle crises and natural catastrophes. So how does all this new Federal organization aid the prevention of terrorism at the local level, and how are the local and state elements configured in relation to the Federal bureaucratic structure?

In order to understand how local, state and federal agencies work together to combat terrorism, we will examine the California Office of Emergency Services as an illustrative example. By looking at this example we will get a clearer picture of the complexity, available resources, task interdependency, and problem structuredness that characterize the environment in which federal, state and local officials operate. These features are important to identify because they define which organization design principles are most appropriate in this context. While the California Office of Emergency Services (California OES, 1998) is not necessarily representative of every state's emergency response system, it is typical.

¹The seven federal agencies are: Commerce, EPA, Transportation, Justice/FBI, FEMA, Health and Human Services, and Energy.

A successful organizational structure for combating terrorism requires a complex network of federal and local agencies. Using a business organization analogy, we can think of the federal government as the corporate headquarters; its product is the reduction of terrorist incidents and their effects. The Federal Government, like the headquarters of a multi-national corporation (MNC), realizes that the geographic expanse of its authority and oversight is too great for it to effectively manage all the components of the federal C-T organization. The federal government delegates its authority to the Justice Department and the FBI. The FBI in turn works through its regional offices.

These regional offices establish, as necessary, Joint Terrorism Task Forces (JTTFs) that form the subsidiary level of the organization. The JTTFs form networks in their respective areas of responsibility through Emergency Operation Service (EOS) sections at the state and local level of government. The JTTF is the lowest level of oversight the Federal Government, through the FBI, exerts on the implementation and execution of counter-terrorism procedures and policy until a crisis occurs.

In a time of crisis, the JTTFs organize according to the nature of the incident and form a Joint Operations Center (JOC). The JOC interfaces directly with the county or state emergency operation center at the incident site. The JOC provides the federal interface between local, state and federal emergency response systems and assumes a lead agency role in resolving the federal crime of terrorism. This relationship gives the JOC a structure that is similar to the MNC structure presented as a differentiated network by Nohria and Ghoshal. However, the JOC structure is different from the MNC headquarter-subsidiary relationship presented by Differentiated Network theory in that the FBI does not have overarching decision or command authority over the JOC's components, various local and state agencies. The JOC works by consensus. This difference between the JOC and the MNC leads us to modify Nohria and Ghoshal's proposals for effective multi-agency organizations for counter-terrorism.

In order to prevent an incident, the local, state and federal organizations converge on a threatened site based on the mounting evidence of credible and significant threats. A significant threat is required for the FBI to conduct a threat assessment (FEMA, 1997, pg. 7). The threat

assessment is the evaluation procedure that the FBI uses to determine if a preventive response is necessary and whether it needs to begin coordination with local agencies.

Local authorities help gather intelligence and provide the initial reports of credible and significant threats to the FBI. They will also be most likely to respond first to a potential terrorist activity, and will make initial decisions on how to react to a threat. Therefore, an intimate understanding of local emergency systems and their workings is necessary.

Local authorities (city police, state police, and sheriffs) organize along jurisdictional boundaries within cities and counties. An example of the California jurisdiction break out is depicted in Figure 3:

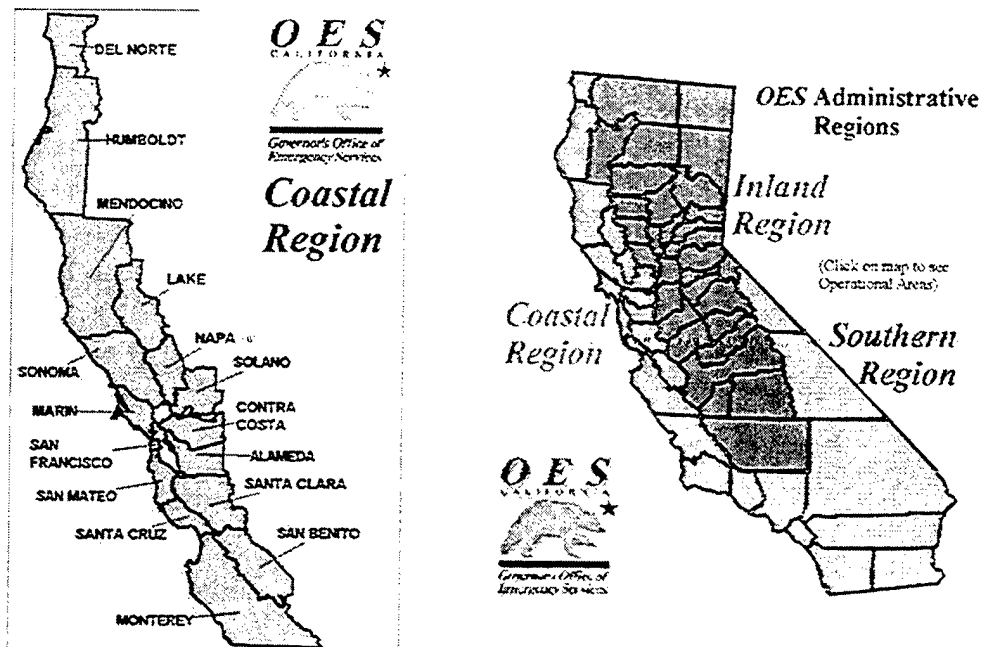


Figure 3. California SEMS Jurisdictions.
From Ref. [California OES Regions, 2000].

These jurisdictional boundaries make coordination necessary through state mutual aid systems. In California, the system is called the Standardized Emergency Management System (SEMS).

While SEMS is primarily used for emergencies, it is also the basis of coordination for counter-terrorism activities. In relation to counter-terrorism, SEMS facilitates law enforcement information and resource sharing. An example of this sharing would be that the counter-terrorism cells of city police and sheriff's departments communicate frequently to share information on potential terrorists and to coordinate counter terrorist

activities. Further, these agencies could provide resources to one another if needed.

The local FBI office facilitates information sharing between local authorities and federal authorities. The local Special Agent-in-Charge is the primary point of contact between local law enforcement and the federal office. but information sharing also occurs through electronic alert messages and distributed incident reports.

Local agents also conduct threat assessments and coordinate the initial FBI involvement in an incident. Should the evaluation of a threat assessment call for Federal participation, federal, state, and local authorities will operate under a Unified Command Structure (UCS).

The Unified Command Structure is a command and control procedure governing multi-agency cooperation. It operates through consensus. The process of arriving at a consensus through the application of the UCS is achieved by the participating agencies agreeing on common operational goals and objectives for an incident. The California Office of Emergency Services, *Law Enforcement Guide for Emergency Operations* (1999) defines the UCS as:

A procedure used at incidents which allows all agencies with geographical, legal or functional responsibility to establish a common

set of incident objectives and strategies, and a single incident action plan(p. 17.)

The Federal Emergency Management Agency² uses slightly different wording to define the UCS. However, a clear sense of interagency cooperation is represented in their definition:

A unified team effort which allows all agencies with responsibility for the incident, either geographic or functional, to manage an incident by establishing a common set of incident objectives or strategies (FEMA, pg. A-12, 1998).

Regardless of the definition, it is apparent that the Unified Command Structure is a procedure designed to resolve conflicting issues of materiel, personnel, and jurisdiction in a situation in which there is no centralized authority. The UCS is decision-making by consensus. The results of the UCS are codified in the set of incident goals, objectives, and strategies applied in incident action plans.

The JTTF, JOC, and all SEMS elements use the UCS as a decision-making system. The Los Angeles Terrorism Early Warning Group (TEW) is a working example of an organization that uses a Unified Command Structure. According to John P. Sullivan, director the LA TEW, the UCS provides [an organization the ability to] "gauge resource needs and

shortfalls, continuously monitor and assess situational awareness/status, and act as the POC for inter-agency liaison in order to develop options for courses of action (COAs) for incident resolution" (Sullivan, Interview, 2000). An organizational chart of the Los Angeles County TEW is provided in Figure 4.

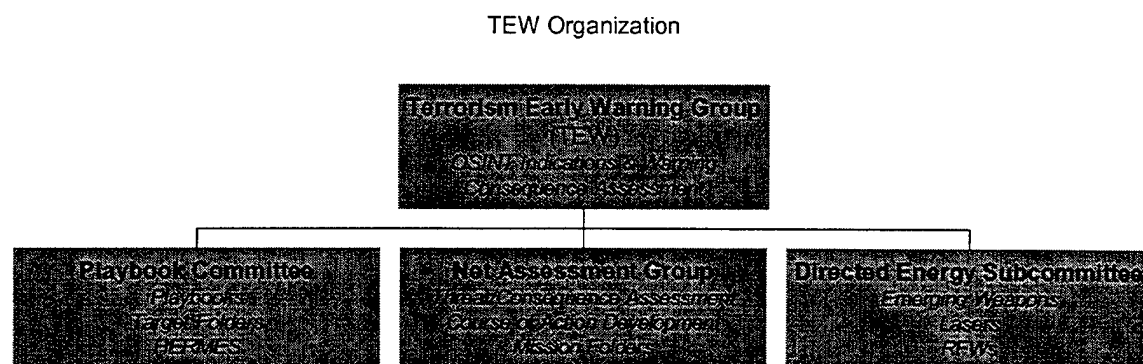


Figure 4. TEW Organization
From Ref. [Sullivan, Briefing, 2000].

Like the TEW, the JOC also operates under the UCS. Once a significant threat is identified during the threat assessment process, the local FBI Special Agent-In-Charge can request the authority to set up a Joint Operations Center (JOC).³ The FBI Field Office forms a Joint Operations

² FEMA, Emergency Management Institute, Basic Incident Command System (ICS) Independent Study IS-195, (1998)

³ In the event that the FBI has determined the presence of a "significant threat" the FBI "simultaneously advises the Attorney General, who notifies the President and NSC groups as warranted, that a Federal crisis management response is required. If Federal crisis management response is authorized, the FBI activates multi-agency crisis management structures at FBI headquarters, the responsible FBI field office and at the incident site." (FEMA, 1997, pg. 7)

Center in order to provide the command structure necessary to provide a flexible response to the crisis. The UCS is an integral part of the formation of the JOC once a significant threat has been assessed. The UCS guides the implementation, configuration, and composition of the JOC based on the particular incident. According to the FEMA PDD-39 Terrorism Incident Annex to the Federal Response Plan (FEMA, 1997):

The JOC structure includes the following standard groups: Command, Operations, Support, and Consequence Management. Representation within the JOC includes some Federal, State, and local agencies with roles in consequence management.

An example of a JOC organization is depicted in Figure 5.

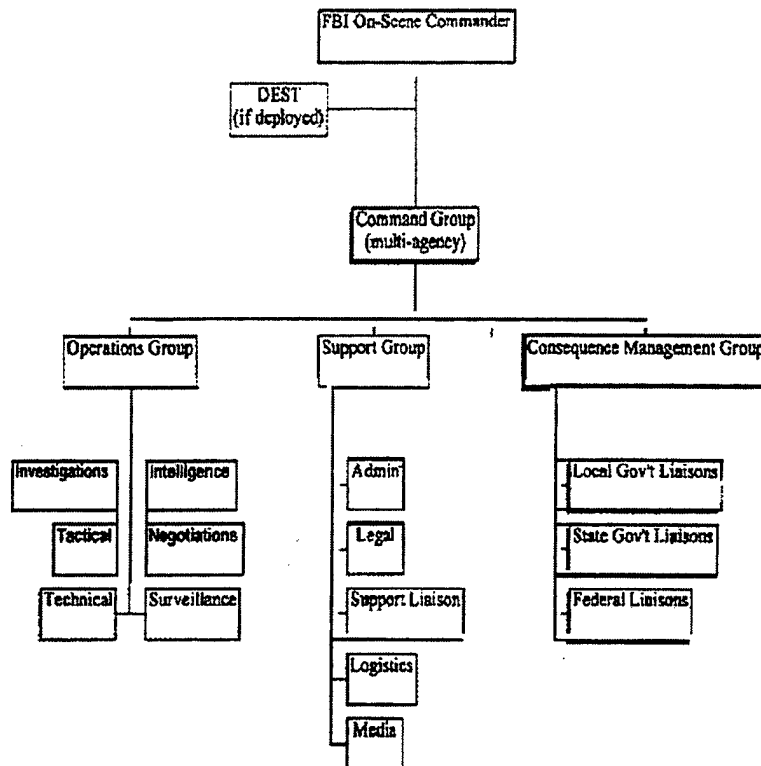


Figure 5. JOC Organization Structure
From Ref. [FEMA, 1997].

The JOC forms the basis for any further investigative requirements during a terrorist crisis and uses the Unified Command Structure in order to determine future action plans, resources and objectives established by SEMS (or any other state designed emergency structure). The FBI On-Scene Commander (OSC) is the command authority of the JOC and a member of the UCS structure. As such, the FBI OSC advises on operational plans and provides resources that influence

the development of the UCS objectives and goals. However, will ultimately reflect a consensus of the Local and State Law enforcement involved with the FBI in pre-empting incident. The JOC can also provide a link to additional external equipment, resources, and personnel not readily available to the local responders. The JOC is the integrated organizational structure that provides information sharing between crisis and consequence management responders. Once the JOC is established all local, state and federal law enforcement and emergency service management personnel support the investigation effort through the collective objectives set forth by the UCS.

E. THE COUNTERTERRORIST SITUATION

Using the characteristics of the World Trade Center Bombing and the description of the current C-T crisis management structure that we have just given, we will now describe the situation faced by this structure in terms of key concepts from organization theory: problem structuredness, task interdependence, available resources, and complexity.

We chose the two organizational theories we are using, from which we have taken these four concepts, because, unlike most organizational theories, they focus on a system

of multiple organizations working together to solve a common problem. Both theories recognize the classic contributions of other organizational theorists and build upon their principles. In Transorganizational Development theory, Cummings (1984) suggests that we must first determine the level of problem structuredness and task interdependence between organizations in order to determine the most critical organizing principles. In *The Differentiated Network*, Nohria and Ghoshal (1997) use environmental complexity (High or Low) and the availability of resources to determine the most pertinent organizing principles. In order to build a typology in Chapter III, we will now describe why we believe the C-T organization faces a situation of low problem structuredness, high task interdependence, a high degree of complexity, and low availability of resources. We will discuss each of these terms in detail in the following sections.

1. Low Problem Structuredness

Cummings states low problem structuredness results in a situation that is highly complex, highly uncertain, and highly conflictual (Cummings, 1984). Low problem structuredness means the problem is poorly defined and not very clear. An example of a problem with high

structuredness would be stopping speeders in front of a school. In this case one knows the speed limit and the law, where to look for lawbreakers, and what to do when the law is broken. Because all these things are known, the problem of stopping speeders has a lot of structure. On the other hand, the problem of stopping terrorism lacks structure because much less can be known about terrorism. A terrorist event can happen anywhere, at any time, and is not as clearly defined or quantifiable as a speeding incident. Further, the terrorist has many means to commit his crime whereas a speeder can only speed using a vehicle. Because a terrorist incident lacks definition, the situation faced by a C-T organization is one of low problem structuredness.

2. High Task Interdependence

Task interdependence is the degree to which the effectiveness of an organization depends on coordination of members' efforts, skills, and information (Cummings, pp. 395, 1984). In a situation when many organizations must work together, high task interdependence means that many organizations must work together to solve a common problem because they cannot solve the problem alone. Again, stopping a speeder in front of a school is an example of a problem with low task interdependence. This problem does

not require much coordination among agencies or skill sharing in order for the organization to be effective. One policeman from one jurisdiction can generally solve this problem. Countering terrorism, on the other hand, depends on multiple agencies sharing resources, skills, and information to be effective. In the World Trade Center bombing, local law enforcement agencies worked with state and federal agencies in order to bring the criminals to justice. This creates a situation of high task interdependence.

3. High Complexity

To determine which organizing principles are most important, Nohria and Ghoshal (1997) look at the complexity (high or low) of the organization's working environment. For the purpose of this thesis, we define this environment as everything that is relevant to the problem the organization is trying to solve. For two reasons, we contend that the environment faced by a C-T organization is high in complexity. First, the problem of countering terrorism is low in structure and high in uncertainty. Problems with low structure and high uncertainty contain a large number of possible threats, actors, resources, or opportunities that might potentially be part of the problem

and its solution. Such environments are highly complex. The second reason the C-T environment is highly complex is because of a high degree of organizational complexity inherent in countering terrorism. Many different kinds of organizations must cooperate to succeed at this task. As we will explain below, when combined, these characteristics make the environment of C-T organizations highly complex.

The first reason the C-T situation is highly complex is because the problem is low in structuredness and high in uncertainty. As Cummings states, problems with low structuredness create situations that are highly complex. The problem of countering terrorism is low in structure, which makes the C-T situation more complex than one that is more structured such as stopping speeders. Further contributing to the complexity in the C-T environment is the uncertainty the organization must attempt to counteract. Uncertainty is defined as "not knowing the value of a variable" (Burton and Obel, 1998). In terrorism this means not knowing who will potentially take action. Further, the terrorist has many weapons and, therefore, the method of attack is also uncertain. The problem of counter-terrorism would have low uncertainty and more structure if terrorists all dressed in red skirts and white T-shirts, attacked on

the first Monday of the month at 5 am, and only used car bombs, but they do not.

Compounding the uncertainty in the C-T environment is the large number of components the C-T organization must monitor and the difficulty of monitoring each one. These components are the terrorists, incidents, and supporters that must be monitored. While the FBI does not fully disclose the number of domestic terrorist groups, they did report pre-empting 10 domestic terrorist events in 1998 alone (Freeh, 1999). In 1999 the FBI reported an increasing number of prosecutions of WMD cases since 1995, rising from 37 in 1996 to 74 in 1997, and 181 in 1998 with three-quarters of these cases threatening a biological release (Freeh, 1999). While many of these incidents were hoaxes, they must still be dealt with and add to the complexity of the environment.

Another component adding to the complexity the C-T organization faces are the supporting elements that must be monitored. A supporting element can be a state sponsor, a transportation network, bomb making materials, storage facilities, or other logistical resources necessary to carry out an attack. The Department of State in the 1999 Global Terrorism Report declared that 7 states are still sponsoring

terrorists and listed 28 terrorist groups that are foreign, engage in terrorist activity, and threaten the security of U.S. citizens or the national security of the United States (Sheehan, 1999). In order to conduct the World Trade Center bombing, Yousef was trained and supported while outside the U.S and within the U.S. friends and conspirators supported him with money, living quarters, and construction assistance. Another supporting element was the availability of bomb making materials and facilities. These supporting elements are difficult to monitor and contribute to the complexity of the C-T environment.

The second major factor that makes the C-T environment high in complexity is the organization itself. As shown in Figures 2 and 5, the C-T organization structure is highly complex because of the number of agencies that must work together to stop terrorism. An example of low organizational complexity is a family owned gas station because it can solve most of its problems without coordinating with other gas stations or organizations to solve its problems. The C-T organization faces high organization complexity because it involves multiple agencies from all branches of local, state, and federal governments to counter terrorism.

We have argued that the C-T organization faces a situation of high complexity. We used two characteristics of the C-T environment to show how highly complex this environment is as opposed to less complex environments faced by other organizations. Due to the combined effect of these characteristics, we have assessed the environment faced by a C-T organization to be highly complex.

4. Low Availability of Resources

In terms of local resources, no one community or region is robust enough to support the financial and technical requirements of all terrorist threats without the support of the collective assets of the United States government. Some of the resources required to effectively combat terrorism are highly specialized and technical in nature and low in availability. The low availability of C-T resources at the local level is the reason we categorize resources as low in availability. While we accept that the federal government has created and is currently increasing a large pool of specialized equipment, resources and personnel to combat terrorism, it is still unavailable to the local responder immediately and, for the most part, resources are tethered to the initiation of the federal crisis management structure we have described in this chapter. Therefore, in terms of

local emergency operation systems these highly specialized and technical resources are scarce.

Due to limited resource availability, the federal government tries to cross-train and equip as many local law enforcement agencies as possible.⁴ This bolstering of the local emergency responder effort has been a costly undertaking of many federal agencies. As examples, the federal government in order to counter the inherent risks of chemical, biological, radiological, and nuclear (CBRN) threats created new units in state National Guard called RAID teams (Office of Secretary of Defense, 1998). The act of creating a new unit is evidence of the shortcoming of people and materiel able to address the problem of C-T. Additional evidence of the low availability of resources is the cooperation of the national health services and the Center for Disease Control with local health agencies in an

⁴DoD and FEMA have been instructed to provide local first responder training for actions against Weapons of Mass Destruction prior to mid-2001. This training is being conducted in a train-the-trainer manner. As of March 21, 2000, the GAO cited that DoD had trained 19,000 individuals and the Department of Justice had trained 44,000 individuals. These efforts and the supporting equipment that is received at the completion of the training is a strong indicator of the presence of low resources present at the local level. For further information see *Combating Terrorism: Need to Eliminate Duplicate Federal Weapons of Mass Destruction Training*, GAO/NSAID-00-64, United States General Accounting Office, 20 March 2000.

effort to identify and acquire large quantities of antidotes as a local response capability to terrorism (Hughes, 1999). Because of the lack of physical presence of equipment, trained personnel, and, the scarcity of federal resources at the local level to combat terrorism, we have categorized resources as low in availability.

F. SUMMARY

As we have shown, the environment in which a counter-terrorist organization must operate is low in problem structuredness. Further, the problem of counter-terrorism is high in task interdependence. We have explained that the situation a C-T organization faces is also high in complexity. Lastly, we have also shown that resources needed to combat terrorism are low in local availability and costly. Having explained the C-T situation in these terms, we intend to use organizational design theory to develop a counter-terrorism JTTF structure that will effectively operate against these environmental conditions.

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III. COUNTER-TERRORISM ORGANIZATIONAL DESIGN

The counter-terrorism problem for the U. S takes place in three unique environments: (1) foreign territories, (2) inside the territorial boundaries of the United States, (3) and in areas of national sovereignty (e.g., airplanes of U.S. Companies). The scope of our work is limited to the organization used to counter terrorism inside the United States. This limitation sharpens the focus to a single counter-terrorism environment so that more specific recommendations may be gleaned from our analysis.

The intent of this chapter is two-fold. Our first intent is to utilize the similarities between the structure of a multi-national corporation (MNC), as defined by Nohria and Ghoshal in *The Differentiated Network* (1997), and the structure of the domestic pre-emptive counter-terrorism structure in order to develop a list of principles that could be used to guide the construction of a pre-emptive counter-terrorism organization. Our second intent is to combine these principles with Thomas Cummings Transorganizational Development (1984) theory in order to develop additional principles that may help improve the interaction processes of U. S. C-T organizations.

A. U. S. COUNTER-TERRORISM AS A DIFFERENTIATED NETWORK

Nohria and Ghoshal (1997) define an MNC as a "differentiated network":

...composed of distributed resources linked through different types of relations: (1) the "local" linkages within each national subsidiary, (2) the linkages between headquarters and the subsidiaries, and (3) the linkages between subsidiaries themselves (p. 4).

The federal counter-terrorism structure can be defined as a "differentiated network". Like an MNC, this structure operates at three levels: headquarters, subsidiary, and local. Differentiated Network theory proposes that each level of an organization should be organized based on its local resources and its local environmental complexity in order to optimally "fit" its environment.⁵

As previously explained, the environment of terrorism is highly complex and has low-available resources. The following conceptual example paraphrased in *The Differentiated Network* from Schmidt and Kochan (1997) describes the complex environment faced by multi-organizational systems like MNCs or the national system for responding to counter-terrorism. While not written about

⁵The term "fit" used in this paragraph refers to an implicit understanding of organizational contingency theory as presented by Lawrence and Lorsch, 1967; J. D. Thompson, 1967; Galbraith, 1973. Nohria and Ghoshal accept this

counter-terrorism, the parallels with the counter-terrorism organization presented in Chapter II are apparent.

. . .Environmental complexity results in increased interdependence as both the headquarters and the subsidiary face a situation of mutual vulnerability. Imperfect knowledge and fluctuations in the environment induce both the headquarters and the subsidiary to engage in reciprocal exchange relationships to make the realization of even independently disparate goals more predictable over time. As the complexity of the local environment in which the subsidiary is located increases, the importance of local knowledge increases, and the subsidiary must be allowed greater influence in the decision-making process. Extensive collaboration yields benefits for both headquarters and the subsidiary; consequently, interaction in these circumstances is usually characterized by cooperation and problem solving rather than conflict and bargaining. (Nohria and Ghoshal, p. 96, 1997)

The concept of a differentiated network correlates well to counterterrorism because there are parallels with the network of political structures from different local, state, and federal government elements that address counter-terrorism. Differentiated network theory offers ideas on how to facilitate integration between the differing governmental entities.

The primary difference between the MNC's and C-T organization systems is authority. In the MNC, the

theory as base paradigm from which they are able to present the concepts of the differentiated networks.

headquarters has direct authority to make decisions and order local elements to comply. This is not the case in the C-T network organization. In the C-T organization, local law enforcement agencies cannot be compelled in the same manner. However, the lack of authority between local, state and federal elements does not relieve the FBI from the requirement assigned in PDD-63 that it be the lead federal agency in regards to domestic counter-terrorism. These conflicting points of authority increase the organizational challenge facing domestic terrorism in the United States.

Because of the authority conflict, we have decided to examine the role of headquarters that face the challenges of directing multiple agencies without the benefit of authority or a formalized communication system. We examine C-T organizations at the state, county, and local levels as subsidiaries to the headquarters level FBI Joint Terrorism Task Forces. The Emergency Operation Services (EOS) centers recognize the need to be linked to the federal structure through the JTTF in order to increase their resources and information. Because of the information and resource superiority the JTTF possesses, the JTTF must function in the role of a headquarters in order to prioritize efforts and resources prior to and during an incident.

In addition to the limitations of headquarters communications systems, another element complicates the multi-agency C-T effort. As detailed in Chapter 2, the JOC combines elements of the FBI headquarters, local and state law enforcement, and members of emergency and health services in an action capacity. As such, the JOC encompasses three roles of headquarters immediately upon its formation. One, it must process information from various other subsidiaries; two, the JOC must report its actions and new information to its higher authority; and three, the JOC centralizes key decision-makers of the Unified Command Structure.

We have now narrowed our understanding of the JTTF C-T network sufficiently to use elements of the two organizational theories as tools that will help us understand the constraints of authority and reporting. The first question we examine using Differentiated Network and Transorganizational Systems is what are the most important structural elements that we should use to guide the development of the JTTF?

B. THE STRUCTURAL ELEMENTS OF A COUNTER-TERRORISM ORGANIZATION

Nohria and Ghoshal assert "centralization, formalization, and normative integration . . . constitute a

fairly comprehensive characterization of the structure of headquarters-subsidiary relations." (p. 97) Therefore, we will focus our efforts on centralization, formalization and normative integration.

Centralization is the degree to which the headquarters element exerts control over strategic policy and procedure decisions. Nohria and Ghoshal categorize centralization as low, moderate, or high. An example of high centralization in the C-T organization would be if the FBI Agent In Charge of the JOC made all the decisions for all organizations in the JOC. This is not possible because, while the FBI may have jurisdiction, they do not control the local participating agencies. Low centralization in the JOC would mean that all participating organizations acted on their own and only reported their actions to the JOC. Moderate centralization in the JOC would mean that participating organizations coordinate with each other and make decisions by consensus. Moderate centralization also means that participating C-T organizations do not have to ask their higher headquarters for permission to take action. Centralization is important to the C-T organization because the level of centralization directly impacts the efficiency of problem solving.

The second structural element is formalization. The degree of formalization in an organization is measured by the presence of and reliance on formal systems, established rules, and proscribed procedures (Nohria & Ghoshal, 1997). Formalization is evident and useful in the counter-terrorism structure because it facilitates information sharing in the absence of a hierarchic authority system. Formalization allows both the "headquarters and subsidiary [to] react flexibly to complex environments while assuring continued pursuit of a mutually beneficial company goal that underlies the system of rules." (p. 100)

The last structural element is normative integration. This structural element deals with the social norms of the corporate structure. Normative integration is "the common set of values that minimizes divergent interests, emphasizes mutual interdependence, and leads to domain consensus" (p. 100). If interagency cooperation is to succeed normative integration must be high because of the large number of actors in the networked C-T organization and their interdependence. The JTTF C-T network organization uses the UCS to facilitate interagency cooperation. The UCS requires decision making by consensus and normative integration is important to the process because it encourages cooperation.

Normative integration is significant because the resulting shared values allow multiple organizations to work together and recognize common issues and objectives.

In summary, Nohria and Ghoshal offer the following advice for a C-T structure. In an environment of high complexity and low resources the pre-emptive counter-terrorism organization ought to have moderate centralization and low formalization. Given moderate centralization and low formalization, the counter-terrorism structure should rely on normative integration mechanisms to form the social structure of the organization.

This characterization is summarized in cell C3 of Figure 6 from Nohria and Ghoshal. The other three cells present the organizational characteristics appropriate for other levels of environmental complexity and availability of local resources.

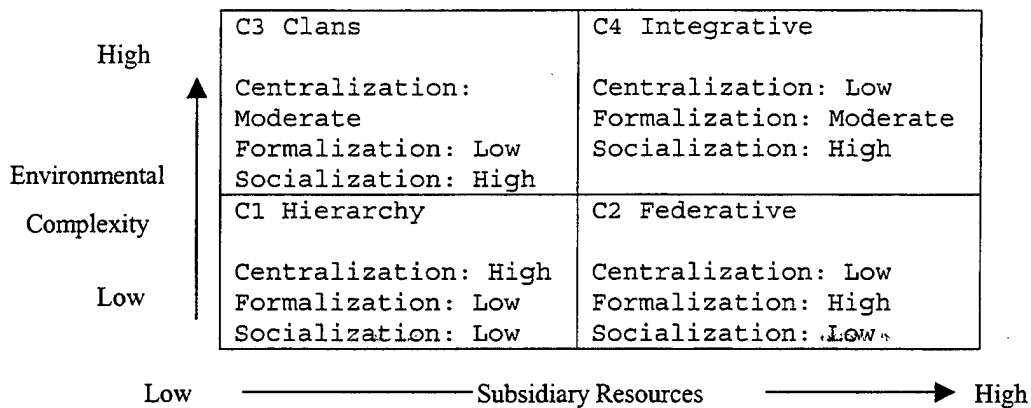


Figure 6. Hypothesized Fit Structure of the Headquarters-Subsidiary relation. From Ref. [Nohria and Ghoshal, p. 103].

Because a C-T organization always operates in a highly complex environment and available resources for the C-T organization may increase from low to high in times of crisis, we will only focus on cells C3 and C4. Figure 7 is a simplified diagram showing the level of each structural element needed to fit the C-T organization to the C-T situation. According to Figure 6, an organization operating in a highly complex environment with low resources will work optimally if it has characteristics of moderate centralization, low formalization and high normative integration. The cell that reflects this condition is the C3-Clans cell. The C3 quadrant parallels the conditions of a JTTF *prior* to entering the integrative process of a JOC

during a crisis. Therefore we have labeled the C3 quadrant JTTF.

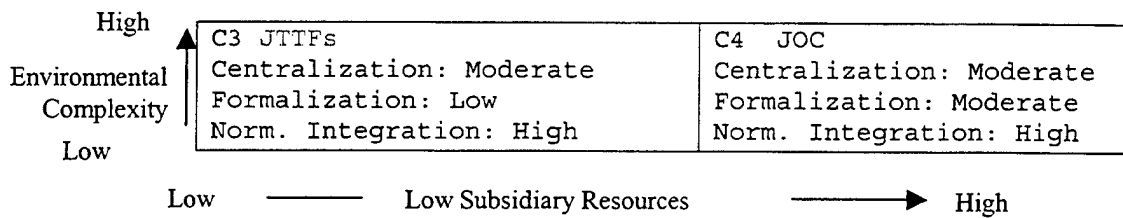


Figure 7: Headquarters-Subsidiary Structure for Counter-Terrorism. From Ref. [Nohria and Ghoshal, p. 103].

The JTTF headquarters must be organized in a manner that facilitates transition into a JOC if the U.S. is to effectively combat terrorism. The JOC has an increased level of authority with which to request and obtain resources because of the nature of an impending incident. This means that an increased number of organizations will be present with equipment and resources and resource levels will shift from low to high. Complexity will remain high because of the problems created by this influx of personnel, equipment and materiel.

According to Differentiated Network theory, once the JOC is formed and resource levels increase, the level of formalization should be moderate and centralization should be low. We agree with increasing the level of formalization once the JOC is formed and resource levels increase and we will return to this point again in Chapter 4. However,

centralization should remain moderate because the JOC should continue to make decisions by consensus. Centralization in the JOC cannot be high because even though the FBI functions in the JOC as the lead federal agency, they still rely on cooperation from other agencies and do not have the authority to tell local agencies what to do. Centralization in the JOC should not be low because in order for the JOC to function efficiently, all participating agencies must coordinate their actions and come to agreement on how to solve problems. Therefore, we have modified the C4 cell of Figure 7 to reflect moderate centralization. We have also labeled it JOC because of the increase in resources. In the next section we will focus on normative integration because of its requirement to be high in conditions of both low and high resource availability.

C. NORMATIVE INTEGRATION MECHANISMS

Normative Integration mechanisms are the social structure of the organization. Nohria and Ghoshal describe five normative mechanisms. The first three elements are selection, training, and rotating leadership. The fourth and fifth are inter-unit communications and interpersonal networks. The fourth and fifth mechanisms support the implementation of the first three by enhancing their effectiveness.

1. Integrative Mechanisms

Integrative mechanisms are important to the C-T network because they develop a common C-T culture and context different from the individual participating agencies' culture and context (Nohria and Ghoshal, 1997)...

a. Selection In The C-T Differentiated Network

In a pre-emptive counter-terrorism organization, normative integration mechanisms may prove to be the most useful. Selection, in terms of which agency is included in the C-T network, is a characteristic not evident in Nohria and Ghoshal's conceptualization of MNCs because they see the elements of the networked MNC system as fixed and stable. In contrast, the formulation of a C-T organization is much more fluid because it is being created to respond to the crisis demands of a potential or actual terrorism incident.

b. Training In The C-T Differentiated Network

Training is critical to implementing normative integration mechanisms. Training also provides the residual effect of validating the previously discussed integrating mechanism of selection as well as rotation of leadership which we discuss next. (Trans-organizational theory presented later in this chapter will offer insight on how

best to approach training integration.) Foremost, training confirms the internalization of broad organization themes, policies, and procedures at the lowest level of the organization. In the multi-agency environment of the JTTF, training is probably one of the most effective means in determining readiness.

c. Leadership In The C-T Differentiated Network

The next normative integration mechanism recommended by Nohria and Ghoshal (1997) is rotating leadership. Rotating leadership can provide positive effects on the organization through horizontal mobility of mid-level management. Rotating leadership also encourages the development of a diverse network of contacts, which have an intangible value to the organization's operating efficiency, especially during a crisis. This may be a difficult system for the C-T organization to emulate because it would be very inefficient for people to move from one agency such as the FBI to another agency such as a local fire department.

2. Differentiated Network Support Systems

The last two normative integration mechanisms provide support to the organizational structure. The ability of the JTTF to successfully change into a JOC will hinge

significantly on the emplacement of support systems that create a seamless communications and control network. While the integrating mechanisms aforementioned contribute significantly to the effectiveness of the JTTF and JOC organization, the foundation of redundant, secure, and robust⁶ inter-unit communications and interpersonal networks must be attended to first. These two personal/technical systems provide the foundation of a C-T pre-emptive structure.

a. Inter-Unit Communications

The first element is inter-unit communications. The presence of a robust JTTF inter-unit communication network is represented by the conveyance of information. The inter-unit communication network of the JTTF C-T structure should be built upon a foundation of lateral networks among participating agencies. Nohria and Ghoshal hypothesize that the greater the number of inter-agency working groups, committee meetings, and conferences that are held, the stronger lateral networks will be among managers.

⁶Robust Communications: Communication Networks with multiple send and receive nodes. Redundant Communications: Communication Networks that offer various mediums, such as FM, VHF, UHF, and SATCOM to the headquarters. Secure Communications: Communications Networks that have the capability to cipher their text and voice messages during transmission.

Nohria and Ghoshal further offer that these meetings will cause a strong technical inter-unit communication network to develop that facilitates the necessary interagency coordination. Inter-unit communications supported by hardware systems and collaborative processes (e.g., interagency committees) may be the second most important consideration to a functional pre-emptive organization, and, in fact, may be of equal importance as training.

b. Interpersonal Networks

The second supporting element is interpersonal networks. This is, in some respects, a non-quantifiable element of the pre-emptive counter-terrorism network organization. Interpersonal networks are defined in terms of personal contacts a member can turn to in a time of crisis (Nohria and Ghoshal, p. 153). Through interpersonal networks, an organization can increase the potential level and availability of required resources. Making contact with high-level participants can increase the amount and availability of resources.

D. SUMMARY APPLIED TO C-T ORGANIZATIONS

In summary, Nohria and Ghoshal offer that in an environment of high complexity and low resources the pre-emptive counter-terrorism organization ought to have moderate centralization and low formalization. Given

moderate centralization and low formalization, the counter-terrorism structure should rely on normative integration mechanisms. Further, as resource levels increase we have explained why the C-T organization should continue to seek moderate centralization but increase to moderate formalization; and must also rely on normative integration mechanisms.

E. TRANSORGANIZATIONAL DEVELOPMENT THEORY

A single theoretical construct will not alone determine an appropriate organization design for a C-T organization. For this reason, we will inspect the insights of Thomas Cummings' theory for Transorganizational Development (1984). Cummings' theory provides additional considerations on how to best organize groups of organizations joined for a common cause. Using the ideas of Cummings' interaction processes (how organizations work together) as additional principles in our organizational construct serves to improve the efficiency of the organizations in the C-T network as they interact in the JTTF. Our goal in applying the analysis of Cummings' principles to the C-T structure is to ensure that our JTTF headquarters construct recognizes the critical organization principles that will positively influence participation and cooperation of all elements of the C-T network.

Transorganizational Development is a theory that attempts improve the effectiveness of groups of organizations that have joined together for a common purpose (Cummings, 1984). Such a group is called a transorganizational system (TS) (Cummings, 1984). This theory provides a useful framework in which to study the organization of counter terrorism efforts, since to counter terrorism, groups of organizations with different resources and jurisdictions must join in a common cause. It is important to note that Cummings is primarily concerned with developing entirely new multi-organization systems but also states his model can be a useful tool in examining an existing transorganizational system.

We intend to show that Cummings' integrative framework uses four key interaction processes that can be broken down into a typology in which three are most relevant to counter terrorism. We will then use these three processes to examine the JTTF as a headquarters organization. The main elements in Cummings' framework are shown in Figure 8, which illustrates how organizational effectiveness (outcomes) are affected by the environment, task/problem, inputs, and interaction processes.

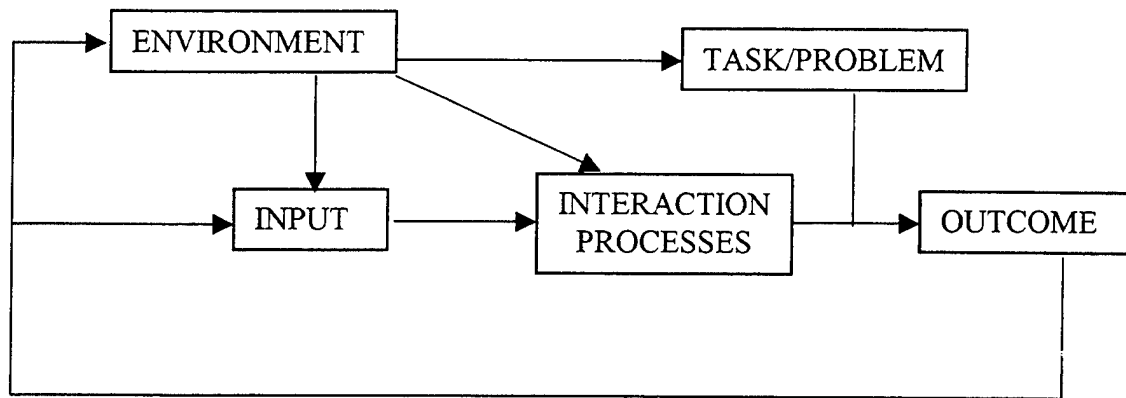


Figure 8 Integrative Framework for Transorganizational Systems From Ref. [Cummings, 1984, p.376].

The interaction processes provide a logical starting point for understanding how transorganizational systems (TS) work (Cummings, 1984). The four key interaction processes are: (a) the level of effort member organizations expend on interacting with each other; (b) the coordination of those efforts; (c) the performance strategies used by member organizations in carrying out the shared task/problem; (d) the level and utilization of organizations' knowledge, skills, and resources applied to the task (Cummings, 1984).

Cummings also organizes these interaction processes in a framework based on problem structuredness and task interdependence. He suggests that problem structuredness and task interdependence are important contingencies that significantly determine which interaction processes are most important to TS success (Cummings, 1984). As we explained

in Chapter II the counter-terrorism situation is one of low problem structuredness and high task interdependence. For example, everyone in a C-T organization has to work together but there is no one way to solve the problem. Figure 9 shows high and low levels of problem structuredness and task interdependence with the corresponding most important interaction processes. For example, because of low problem structuredness and high task interdependence as in the terrorism situation, TS performance is influenced most by coordination of effort, performance strategies, and the level and utilization of knowledge, skills, and resources. Because the counter-terrorism situation puts us in the bottom right quadrant in Figure 9, we intend to focus our study on coordination of effort, performance strategies (how organizations solve problems), and level and utilization of knowledge, skills, and resources in analyzing current counter-terrorism organization.

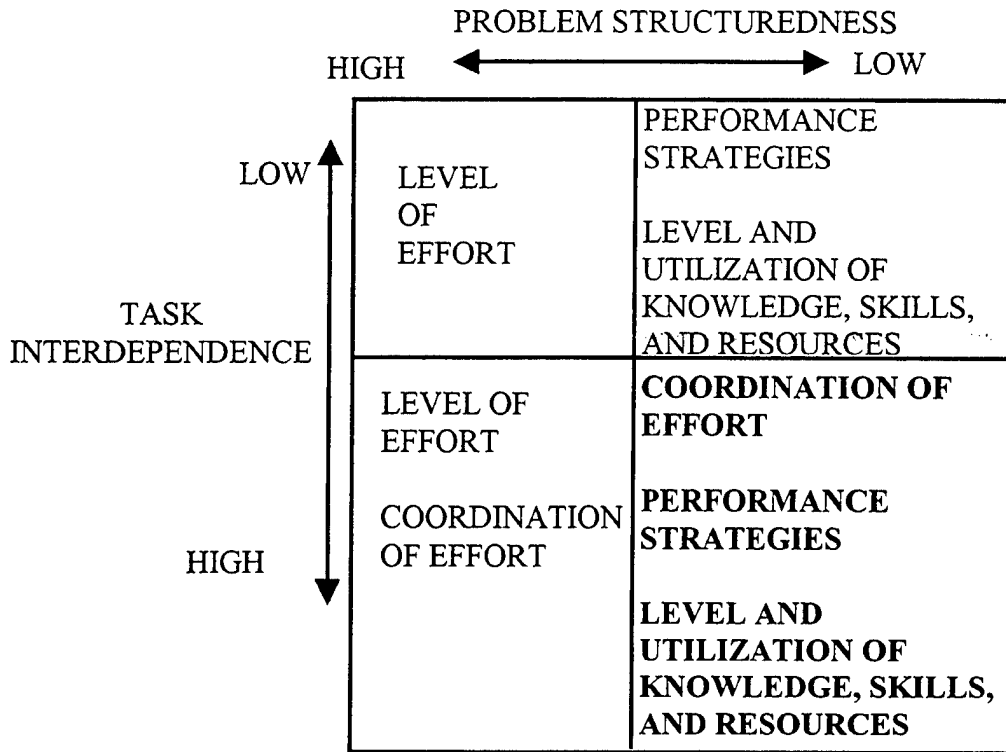


Figure 9 Interaction of TS Problem and Interaction Processes From Ref. [Cummings, 1984, p.376].

1. Coordination of Effort (Integrating Devices)

According to Cummings (1984), coordination of effort involves five primary integrating devices: (a) leadership; (b) structure; (c) compatible features; (d) communication processes; and, (e) positive assessments. For the scope of this thesis we will focus on leadership and structure.

a. Leadership

Leadership can come from a variety of sources (Cummings, 1984). Mandates or funding that cause organizations to work together can be a form of leadership.

Leadership could also come from a charismatic individual who feels compelled to take action and has the authority to institute change. Further, Cummings states that leadership time is most often spent on building exchange relationships, resolving interagency conflicts, and managing the interface among participating agencies (Cummings, 1984).

b. Structure

Another integrating mechanism is structure. This variable can be implemented to serve as a substitute for leadership when the intensity of interactions between organizations increases to a level that individual leadership can no longer keep up (Cummings, 1984). As the intensity of interactions between organizations increases, organizations must attempt to formalize exchanges through rules, policies and standard procedures in order to achieve goals (Cummings, 1984). We will discuss the level of formalization in a C-T organization further in Chapter IV.

2. Performance Strategies

Performance strategies are another interaction process variable affecting TS outcomes. These are the primary mechanisms that organizations use to solve problems. Cummings outlines four methods for helping TSs develop or change performance strategies: (1) direction setting; (2)

diagnosis; (3) frame breaking of collective definitions; and (4) changing networks (Cummings, 1984).

a. Direction Setting

Direction setting is the process of establishing valued ends and clarifying shared direction for action (Cummings, 1984). Further, direction setting is mainly concerned with reaching a consensus on how to solve the problem and second, by developing specific action plans or strategies to achieve the desired outcome (Cummings, 1984).

b. Diagnosis

Diagnosis is the systematic collection and dissemination of data about the TS for the purpose of learning about it and possibly changing it (Cummings, 1984). Someone outside the organization typically does this process and provides feedback to the organizations working together.

c. Frame Breaking of Collective Definitions

Collective definitions give legitimacy and meaning to an organization's actions (Cummings, 1984). Frame breaking is needed to disrupt persistent problems in the interactions between different organizations. Breaking collective definitions that impede collaboration can be done by creating a new language, or history, and by myth making (Cummings, 1984). For example if local law enforcers have a

negative perception of the FBI, they may not share information with them or work together with them. One way to fix this problem would be to unify the two organizations by giving them a common goal of and a common language for countering terrorism.

d. *Changing Networks*

The final method of helping a TS change or improve its performance is by changing the network relationships within participating organizations (Cummings, 1984). The factor that significantly influences the ease or difficulty in changing network relationships is how loosely or tightly coupled the network is; that is, how well norms are shared and enforced (Cummings, 1984). It is important to ensure that the network is sufficiently tight so norms are shared and enforced and the direction of those norms support coherence in TS performance strategies (Cummings, 1984).

3. Level and Utilization of Resources

There is one final interaction process variable identified by Cummings as being relevant to the C-T context of low problem structuredness and high task interdependency (see Figure 5). This is the level and utilization of participating organizations' knowledge, skills, and

resources applied to the task or problem. This variable is primarily affected by the composition of the TS.

There are two related approaches to determining appropriate TS composition: (1) the expanding network model, and (2) stakeholder analysis. The expanding network model involves starting with a smaller core group and expanding to more organizations as the need for additional resources are identified (Cummings, pp., 389-390). Stakeholder analysis is primarily concerned with selectively recruiting organizations and groups affected by the problem that have a stake in its solution (Cummings, p., 390). This approach is extremely important when developing a new TS but also has applications after a TS has been formed. Both of these approaches to TS composition will be discussed in Chapter IV.

F. INTEGRATING THE THEORIES

We intend to use Differentiated Networks and Transorganizational Development theories to study currently formed counter-terrorism organizations and provide suggestions for future development. We developed a table shown in Figure 10 which integrates the two theories. The left side of the table shows organizational principles that support an effective C-T organization. The right side of the table shows the organizational characteristics and

activities we used to measure the principle. In Chapter IV we will give our evaluation of two C-T organizations we studied using the chart in Figure 10.

To evaluate this Principle	We looked for these Characteristics and Activities
Moderate Centralization	Consensus Working Group Training Decision Authority
Low Formalization	Few Interagency Guidelines Intelligence Sharing Agreements Decision Process Shared Rules and Policies
Integrating Mechanisms	Inter-unit Communications Inter-personal networks
Leadership	Focused on Coordination Team Building Rotational Leadership
Direction setting	Goal Setting Action plans
Diagnosis	External/Internal Assessments
Frame breaking	New Language New History
Changing Networks	Common Norms to Support Integration and Innovation
Level and Utilization of Resources	Composition and Selection of Participating Organizations

Figure 10. C-T Organization Fit Categories.

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IV. APPLICATION

A. INTRODUCTION

In this chapter we examine the current C-T organization using the key principles outlined in Chapter 3. We gathered our data from three sources: 1) The Monterey County Office of Emergency Services, 2) Los Angeles Emergency Operation Center Terrorism Working Group, 3) Open source archival data. We conducted interviews, observed exercises, and studied various open source reports and documents.

We observed the Monterey County Office of Emergency Services (OES) while it was conducting training exercises. We chose this organization because it represents the local multi-agencies that would collaborate during a crisis much like a JTTF. The Director of Emergency Operations familiarized us with the Standard Emergency Management System (SEMS). We observed three training exercises conducted by the Office of Emergency Services led by the Director of the Emergency Operations Center. These exercises involved support agencies from the Monterey County Sheriffs Department, Monterey County Fire Department, California Highway Patrol, Monterey County Health Services and various other support agencies.

We observed the Los Angeles County Emergency Operations Center Early Warning Group during its preparation for the Democratic National Convention (DNC). We chose to examine this organization because it involves the collaboration of multi-agencies much like a JOC. We observed the Center's preparations and were given briefings and information by the Director of the Terrorism Early Warning Group (TEW). We spent two days observing operations of the TEW. We observed planning meetings, which involved participants from many government agencies to include the FBI, California National Guard, the LAPD, LA Airport Police, Center of Disease Control, local Fire Departments and various other federal and state agencies.

We have organized the results according to the principles presented in Chapter III. We will review the principle, state our assessment, and explain how we came to this assessment. In Chapter V we will give conclusions and recommendations based on our findings.

B. CENTRALIZATION

Centralization is the degree to which the headquarters element exerts control over policy and procedure decisions. According to the theories we are using, the C-T organization should seek a moderate form of centralization. An example

of high centralization in a C-T organization would be if the FBI Special Agent in Charge made all the decisions for each agency in the JTTF. Low centralization for the C-T organization would mean that all agencies in the JTTF would act on their own and would not reach an agreement on specific courses of action. Moderate centralization means that one agency does not make all decisions but rather a consensus between organizations is attained before a specific course of action is taken. In order to assess the degree of centralization in the C-T organization, we evaluated three areas. The three areas are: Consensus Working Groups, Training, and Decision Authority.

1. Consensus Working Group

We observed a consensus-working group at the TEW for the DNC and at the Monterey Office of Emergency Services. The participants were all involved in problem solving and decision-making and no one headquarters had total decision making authority. Each agency used Federal, State, and Local directives as a guideline for decision-making.

2. Training

At the Monterey OES the training events were hosted and organized by the Director of Emergency Services. The training events were exercises centered on hypothetical

scenarios that tested various emergency response systems. All participants were to participate in decision-making. In other words, the Director of the Monterey OES organized the event but the training itself focused on decentralized decision-making. At the DNC, the Director of the TEW organized and ran the training events. This training also focused on decision-making by consensus and getting multiple organizations to solve a common problem. In both cases goals and strategies were accomplished using the UCS.

3. Decision Authority

The decision authority we observed followed the guidelines of the Unified Command Structure outlined by the California Law Enforcement Guide for Emergency Operations. During one exercise, conducted by the Monterey County Emergency Operations Services, it was clear that the location of decision authority depended on the situation. For example the decision to declare a disaster would be made by the Director of the Emergency Operations Center and County Commissioners. Therefore, because decisions were made by consensus, centralization is moderate.

4. Assessment

The C-T organizations we observed displayed a moderate degree of centralization. Centralization is moderate

because no one organization has sole decision making authority and multiple agencies make decisions based on a common strategy or goals developed by consensus. We find the current level of centralization in the JTTF and JOC matches the level of centralization suggested by Nohria and Ghoshal for the JTTF and our modified interpretation of Nohria and Ghoshal (as described in Chapter III) for the JOC.

C. FORMALIZATION

The degrees of formalization in an organization are reflected by the presence of and reliance on formal systems, established rules, and proscribed procedures to make decisions. (Nohria & Ghoshal, 1997) An organization with high formalization would have many rules and regulations and would rely on them to make decisions and solve problems. An organization with low formalization would not rely on any written regulations and rules for problem solving. An organization with moderate formalization would solve problems using written rules as a general guideline to problem solving.

1. Few Interagency Guidelines

We examined the Interagency Guidelines as a measurement of formalization. The interagency guidelines in the

California Law Enforcement Guide for Emergency Operations demonstrates an emphasis on developing rules and for sharing critical resources and the prioritization of incidents. Formalization still remains low because, while participation in SEMS is required by statute, decision makers do not rely on these regulations to make decisions. Further, the C-T organization is not required to follow a precise checklist but uses these guidelines to assist the decision-making process.

2. Intelligence Sharing Agreements

A member of the Monterey County Sherriff's department told us that intelligence-sharing agreements exist between Federal, State and Local law enforcement agencies. Most of these agreements have been in place for many years and are general in nature and not specific to terrorism. This does not affect our assessment of formalization because these agreements are primarily in placed to facilitate information sharing and not decision making.

3. Decision Process

The decision processes we observed at the Democratic National Convention and during our observations at the Monterey OES tabletop exercises were not highly formalized. We observed the agencies using the common goals and

objectives established by the UCS to direct their individual agency responses, but we did not see a formalized decision process. For example, if an agency participating in the protection of the DNC wanted to do something, they coordinated with the Director of the TEW. He then followed the objectives of the UCS and coordinated with other agencies in order to gain a consensus.

4. Shared Rules and Policies

At the State and Local level we observed shared rules and policies mandated by SEMS. These rules are outlined in the *California Law Enforcement Guide for Emergency Operations* (1998) and both the LA TEW and the Monterey County OES followed these guidelines. The C-T organizations we observed only use them as a general guideline for problem solving and therefore formalization was low. This is appropriate for day-to-day operations, however during a crisis these guidelines would be relied on more heavily for problem solving and formalization would become moderate.

5. Assessment

Formalization is currently low in the C-T organization structure. While formal systems, established rules, and proscribed procedures exist, they are primarily used to facilitate coordination and communication between

participating agencies. These rules and procedures do not constrain the ability of the C-T organization to make decisions and, therefore, we assess formalization as low in the C-T organization. However, we recognize the need for an increased formalization as resources increase in the organization during a time of crisis.

D. NORMATIVE INTEGRATION MECHANISMS

1. Inter-Unit Communications

At the DNC we did not observe a formalized process for establishing communications but we did observe a large communication network that consisted of radio, video, telephonic, and electronic message systems. We did not observe a separate committee responsible for establishing and maintaining communications with all agencies, however communications seemed to work. Inter-unit communications did appear to be robust.

2. Interpersonal Networks

We were unable to gather enough data on this characteristic to ascertain its level of contribution to formalization.

3. Assessment

Integrative mechanisms in C-T organizations were high. Inter-unit communications were robust and sufficient to

facilitate information sharing and coordination in both organizations we examined.

E. LEADERSHIP

As explained by Cummings, leadership can come from a variety of sources. In order to look for the presence of leadership we looked at coordination, team building, and rotational leadership. Coordination is a leadership approach that can help resolve conflicts between organizations by increasing interface between participating agencies. Team building is a characteristic of leadership and can increase the efficiency of an organization by building relationships.

1. Coordination

We did not observe a centralized planning calendar between Local, State, and Federal officials for training, meetings, or conferences. A well-coordinated effort among the multi-agencies participating in a JTTF would facilitate an effective multi-agency system. We did observe effective coordination between agencies participating in the TEW and the Monterey County EOS. For example the local agencies were able to meet at a common place at a common time with little or no problems. However, coordination between local organizations and state and higher levels could be improved.

2. Team Building

We did observe the beginning of team building in both the LA TEW and the Monterey Office of Emergency Services. Team building was evident in the posting of positions, establishment of rosters, and the familiarity of participants with co-workers. Much of the training and participation we observed in the LA TEW Group and the Monterey County OES promote a strong team ethic and will only grow as the organizations mature. This observation is based primarily on the sense of unity and shared goals we observed between the agencies when they were working and training together. For example, we observed a local agency and a federal agency resolve jurisdiction problems without conflict or appeal to a higher authority. We believe this example illustrates a sense of unity and shared goal between these organizations.

3. Rotational Leadership

None Observed.

4. Assessment

At the local level, coordination and team building are present and effective. A stronger leadership presence through training sponsorship, calendar development, and coordinated procedures could be developed by the JTTF. This

form of stronger leadership by the JTTF would facilitate better and more effective coordination between all agencies and levels of local, state, and federal C-T responders. Although not observed, we do believe rotational leadership could have positive effects on the C-T organization. This will be discussed in Chapter V.

F. DIRECTION SETTING

Cummings states that direction setting is the process of establishing valued ends and clarifying shared direction for actions. Initially, direction setting is concerned with establishing by consensus who does what, and second by developing specific action plans or strategies to achieve outcomes. In order to look for the presence of direction setting we looked for goal setting and action plans.

1. Goal Setting

The Terrorism Working Group and the Monterey OES both exhibited goal setting to help focus their Action Plan development. For example, the Monterey County EOS has published goals for crisis action planning clearly displayed on the wall in the EOC. We observed goal setting at the LA EOC for the DNC by the posting of exercise objectives. The goals of the LA EOC Terrorism Working Group were achieved through consensus and reflect the individual goals of each

agency. In other words, each agency provided input which was used to create goals for the TEW.

2. Action Plans

Action plans are required by the CA OES and were readily apparent in the preparation by the LA EOC prior to the DNC. The Monterey OES tabletop exercises did not possess these formalized action plans but the table top exercises were scripted training scenarios and not an operational contingency like the DNC. Action Plan development is a codified process among state agencies in California. The process is recorded in the California OES *Law Enforcement Guide for Emergency Operations* (1998). All participating agencies in the LA TEW demonstrated a fundamental understanding of Action Plan development during execution of the Special Event EOC at the DNC. An area to be improved in Action planning is multi-agency implementation. Multi-agency implementation is the development, understanding, and utilization by external federal and state agencies of products developed by a JTTF or TEW to respond to a potential or actual incident. The reason multi-agency Action Plan implementation needs improvement is because of the involvement of many civilian and federal agencies that are not specifically familiar with

the format and terminology of the California Standardized Emergency Management System (SEMS). We believe this observation has nation-wide applicability.

3. Assessment

Goal setting is working because SEMS makes the UCS a priority from the outset of a multi-agency incident. However, goal setting could be improved with a more deliberate process of direction setting. Action planning is effective at the local level. Multi-agency implementation must be improved.

G. DIAGNOSIS

Cummings states that diagnosis is the systematic collection and dissemination of data about an organization for the purpose of improving it. He also states that typically someone outside the organization completes this task. In order to look for the presence of diagnosis we examined external assessments and internal assessments.

1. External Assessments

We did not observe any external assessments taking place at the DNC or at the Monterey OES. The Government Accounting Office (GAO) has done assessments but these GAO reports focus on assessing federal expenditures and utilization of funds rather than on increasing

organizational operating efficiency.⁷ The GAO reports, however, still provide insight on the larger scope of issues facing the C-T organization.

2. Internal Assessments

We observed internal assessments taking place in both the DNC and the Monterey OES. The internal assessments took the form of brief-backs led by the Director of each of the agencies. The focus of these brief backs in the case of the Monterey County tabletop exercise was on the current scenario. However, we did not observe previous assessments being used to plan future exercises.

3. Assessment

External assessments should be focused at local levels and should be conducted. Internal assessments should be more regimented. An internal assessment format needs to be developed. The assessments should be used to systematically incorporate results into plans which will improve existing procedures and policies.

⁷ See Combating Terrorism: Need to Eliminate Duplicate Federal Weapons of Mass Destruction Training, (GAO/NSIAD-00-64), March 20, 2000. Combating Terrorism: Issues in Managing Counterterrorist Programs), GAO/T-NSIAD-00-145, April 6 2000. Combating Terrorism: Comments on HR4210 to Manage Selected Counterterrorist Programs, (GAO/T-NSAID-00-172), May 4, 2000.

H. FRAME BREAKING

Cummings states that frame breaking is a process of creating a new language or history between organizations in order to break down perceptions that could impede collaboration. While creating a new language or history might not be a specific objective when creating a new organization, this often occurs in effective multi-agency organizations. To examine the presence of frame breaking we looked for the use of a new language or the creation of a new history.

1. New Language

We did not observe any explicit attempts to form a new language between C-T organizations. We did observe at both case sites a common terminology. The foremost example of the development of a new C-T language amongst members of the Monterey County EOS and the LA TEW was a understanding of the terms "Crisis Management and Consequence Management" and their implied SEMS structures.

2. New History

We did not observe any attempts to record new histories for C-T organizations. However, because each special event where terrorism might occur now requires a operational EOC

with JTTF support, there is a lineage of events and participation anecdotes being created.

3. Assessment

Framing braking is occurring. The LA TEW and the Monterey EOS represent organizations that are removing the perception that multi-agencies are inefficient and incapable of working together for a common objective.

I. CHANGING NETWORKS

Another method of helping an organization improve its performance is by changing network relationships. This is a process of ensuring that network coupling is sufficient to ensure norms are shared and enforced, and promote innovation in performance strategies. We did not observe any attempts between C-T organizations to change network coupling.

J. LEVEL AND UTILIZATION OF RESOURCES

This component is primarily affected by the composition of the organization. As explained by Cummings (pp., 389-390) this process involves determining who will be in the organization. He offers two very similar methods of selection, which we observed at the DNC and at the Monterey OES.

1. Expanding Network Model

The expanding network model involves starting with a small core group of participants and expanding to more organizations as the need for more resources is identified. We observed the LA TEW using the expanding network model during the DNC. For example, the TEW invited agencies that did not have a stake in problem solving to participate in and give input about the exercise.

2. Stakeholder Analysis

Stakeholder analysis is the process of selecting and recruiting organizations and groups who are affected by the problem and have a stake in its solution. This process was simulated during each Monterey OES tabletop exercise. The Director of the Monterey County Emergency Operations Center invited new organizations to participate based on the input of currently participating organizations and previous exercises. This process is more useful when time is constrained because it selects participants based on the situation and only includes needed participants.

3. Assessment

Our assessment is that both of these methods of selection are valid and can be useful in determining required agency participation.

K. CONCLUSION

The C-T organizations we observed are generally following the principles we tested. The level of centralization in the C-T organizations we examined matched our expectations in Figure 7. Formalization remains low in the C-T organization even when resources increase which does not match our expectations and we believe this area can be improved. As expected, normative integration was high in the C-T organizations we examined. Normative integration is the strongest match between the hypothesis fits from the theories, our interpreted expectations and our observations. We expected this because of the common efforts of all law enforcement personnel to react to crimes, specifically terrorism. In Chapter V we will give some specific recommendations for the C-T organizations based on our assessments of each principle.

V. RECOMMENDATIONS

A. INTRODUCTION

In this chapter we intend provide some recommendations about the C-T organization based on the organizational principles we evaluated. We have organized our recommendations according to the principles presented in Chapter 4. We will give specific recommendations about each principle.

B. CENTRALIZATION RECOMMENDATIONS

1. Consensus Working Group

The JTTF should function as a consensus-working group so that its participants can provide input for decision making. The JTTF should be the headquarters for planning regional training events. We believe this is an appropriate recommendation because the JTTFs have regional orientation and have an established network of local and state agencies that are familiar with the topic of counter-terrorism and the governing statutes and codes. Further, we recommend that local, state and federal agencies directed to organize to combat terrorism begin by forming consensus working groups. We recommend this form of organization because consensus working groups are a rapid and efficient way for decision-makers and participating agencies to assimilate the shared values and resources available to address counter-terrorism.

2. Training

Because normative integration must be high for both the JTTF and JOC we recommend an increased emphasis on training at the JTTF level. The JTTF should produce a regional centralized counter-terrorism training plan. This plan should be coordinated with all local and state participants in order to maximize participation. The federal government should offer training funds to local and state agencies for participation in these exercises by adding a section under Title 18, Part I, Chapter 133 B. This chapter in the United States Code addresses terrorism specifically and would be helpful in codifying training efforts between local, state, and federal agencies.

3. Decision Authority

The Unified Command Structure should be used in crisis management and C-T organizations should train often using this method of decision-making. This method of decision-making by consensus is paramount for successful C-T organizations. We recommend using the Department of the Army Field Manual for *Staff Organization and Operations* (1997) military deliberate decision-making process as a guide for this process but the process should remain as informal as possible. This does not increase the

formalization of the JTTF because it is establishing a procedure that will not be implemented until a time of crisis but would facilitate planning during crisis management for the JOC. A common decision process would actually decrease the time required for the JOC to arrive at acceptable common goals and objectives with the local and state agencies.

C. FORMALIZATION RECOMMENDATIONS

1. Interagency Guidelines

The number of interagency guidelines is appropriate and should remain unchanged.

2. Intelligence Sharing Agreements

We recommend no change to the current system of intelligence sharing systems.

3. Decision Processes

We recommend that the JTTF maintain the informal decision making by consensus for long-term planning and coordination. The JTTF should create a more formalized decision making process for pre-emptive crisis management. This will not increase the level of formalization in the JTTF because the formalized decision-making process will only be used by the JOC. This consensus decision-making

process by the JTTF will increase the formalization of the JOC to moderate as we have recommended.

4. Shared Rules and Policies

We see no need for a change in the level of shared rules and policies.

D. NORMATIVE INTEGRATION MECHANISMS RECOMMENDATIONS

Today's technology allows for a myriad of applications in inter-unit communications. Due to distances between participating agencies, the JTTF should establish uniform protocols for communication. This may require that elements of the C-T Network structure at the subsidiary and local levels be provided additional funding, technical expertise, and manning specific to improve communications. This additional funding could be tied to the Title 18, Part I, Chapter 133B statutory change mentioned under training recommendations. Another form of communication that may work would be a federally run and funded website for lessons learned and communication.

E. LEADERSHIP RECOMMENDATIONS

1. Coordination

We recommend that the JTTF establish a centralized planning calendar for training events, meeting and conferences. We also recommend that a website be created

that grants access to all C-T organizations in order to express lessons learned and information sharing. The regional JTTF should host this site.

2. Team Building

In order to foster team building, we recommend C-T organizations establish regular and frequent training. We also recommend that some form of social integration among participants be planned by the JTTF that is separate from a training or operational incident.

3. Rotational Leadership

We did not observe rotational leadership and do not recommend rotating leaders in C-T organizations. As noted in our discussion of team building, these organizations will function better with leaders who get to work with and know each other over the long term.

However, we do recommend rotational leadership among agencies for training purposes. We recommend selecting and rotating key leaders from local and state C-T organizations to key training events or operational incidents. For example, the JTTF could give each county two seats for observation of a training event. The county could then select who attends the training event. These leaders would have full access to all JTTF exercises and actual incidents

in their region. This rotation of leadership would give members of the local emergency operations organizations a better understanding of counter-terrorism operations. In turn, these members would be able to relate their observations to other members of their C-T network.

F. DIRECTION SETTING RECOMMENDATIONS

1. Goal Setting

We recommend that goals within the C-T organization should be set by consensus in order to ensure a common set of objectives. It is essential that common objectives be defined and accepted. We also recommend that the JTTF establish long-term and short-term objectives.

2. Action Plans

We recommend developing action plans for likely C-T scenarios. For example, when a C-T organization conducts an exercise, such as a terrorist attack on a dam, this training exercise should result in an action plan for a dam attack. Developing action plans in this manner facilitates preparedness by capturing lessons learned from training. Once these action plans are established for an event, they could be tested during future training exercises in order to determine if the action plan is feasible.

G. DIAGNOSIS RECOMENDATIONS

1. External Assessments

We recommend that the JTTFs establish regional assessment teams composed of local, state and federal C-T organization members to evaluate counter-terrorism training within their region. The external assessments should culminate in written accounts of the activity and be distributed to all regions. The domestic C-T web page previously recommended could provide the vehicle for conveying this information.

2. Internal Assessments

We recommend using a regional-oriented web-site as vehicle, we recommend that local and state officials post the outcomes and lessons learned from small-scale exercises to a central board where others can observe and share information on these events. The internal assessments format should be a part of the routine interaction of the JTTF Terrorism Working Group. A record of these internal assessments should be posted on the JTTF website.

H. FRAME BREAKING RECOMENDATIONS

1. New Language

We do not recommend formalizing a new language because the current language commonality between C-T organizations is sufficient.

2. New History

We believe that the recording of internal and external assessments that we have previously recommended will result in a new shared history among organizations participating in C-T.

I. CHANGING NETWORKS RECOMENDATIONS

While we did not observe any effort to change the current local, state and federal C-T network, we recommend a future study be undertaken to evaluate the level at which norms are shared and enforced among participating C-T organizations.

J. LEVEL AND UTILIZATION OF RESOURCES RECOMENDATIONS

We recommend using both the expanding network model and stakeholder analysis for selecting participants in the C-T organization.

K. CONCLUSION

The purpose of this thesis was to determine the organizational design principles for an effective C-T organization. The analysis examined how a United States

inter-governmental organization structure should be formed to facilitate a rapid transition to crisis management with minimal warning time. The most important question we tried to answer was what principles and/or processes would help the United States organize more efficiently to combat terrorism? We evaluated the current C-T organizational structure at the local level using two organizational theories designed to improve organizational efficiency when multiple players join to solve a common problem.

Our evaluation revealed that the United States is currently on the right track. We found that all individuals at the local level of the C-T structure were bound by a sense of service and an overarching goal of stopping terrorism. This is the basis for normative integration, the critical element in the models we used. We believe the three most important findings of our research are: 1) crisis management decision making and planning must be consensus based, 2) training should be coordinated at the regional JTTF level and supported and funded by the federal government, 3) that more lessons learned and information sharing is needed and could be facilitated by regional JTTF websites.

L. AREAS FOR FUTURE RESEARCH

This study has shown the need for future research in the area of changing networks which includes an evaluation of the level at which goals and norms are shared and enforced among participating C-T organizations. Further, we recommend additional studies be conducted at the JOC and JTTF levels in an actual crisis.

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